

What is claimed is:

1. Device for depositing in particular crystalline layers on an in particular crystalline substrate (1), having a high-frequency-heated substrate holder (2) made from conductive material for holding the substrate (1) with surface-to-surface contact, which substrate holder (2) has a zone (3) of higher electrical conductivity, characterized in that the zone of higher electrical conductivity is associated with the supported surface of the substrate (1).
2. Device according to Claim 1 or in particular according thereto, characterized in that the zone (3) of higher electrical conductivity substantially corresponds to the area taken up by the substrate (1).
3. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the zone (3) is formed by an insert piece (3) made from metal in a substrate holder (2) which consists in particular of coated graphite.
4. Device according to one or more of the preceding claims, or in particular according thereto, characterized in that the substrate holder (2) has one or more substrate-bearing disks (4), which are in particular mounted on a gas bearing and each have an associated insert piece (3).
5. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the insert piece (3) is directly associated with the substrate bearing disk (4) and in particular the entire substrate bearing disk (4) consists of metal.
6. Device according to one or more of the preceding claims or in particular according thereto, characterized by a multiplicity of substrate bearing disks (4) disposed in planetary fashion on a substrate holder.

7. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the substrate bearing disk (4) is located on a gas bearing in a bearing recess (9) in the substrate holder and the insert piece (3) or the more electrically conductive zone is associated with the base of the bearing recess (9).

8. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the one or more insert pieces consist of molybdenum, tantalum, tungsten or the like.

9. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the substrate holder (2) is surrounded by an HF coil (5).

10. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the substrate holder (2) is disposed above an HF coil (5).

11. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the reactor, with which the substrate holder (2) is associated, is a cold-wall reactor, the walls of which are heated only by the radiation of the heated substrate holder (2).

12. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the reactor is a tunnel reactor.

13. Device according to one or more of the preceding claims or in particular according thereto, characterized in that the reactor is a planetary reactor with a central gas feed and a rotating substrate holder (2), which is

support for a multiplicity of substrate bearing disks (4) arranged in planetary fashion with respect to the center of the substrate holder (2), which substrate bearing disks (4) in each case rotate on a gas bearing.